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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,323	03/03/2004	Lawrence C. Lei	AMAT/5191C1/ISM/CORE/MCVD	4370
44257	7590	06/23/2005	EXAMINER PAIK, SANG YEOP	
MOSER, PATTERSON & SHERIDAN, LLP APPLIED MATERIALS, INC. 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			ART UNIT 3742	PAPER NUMBER

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/792,323

Applicant(s)

LEI, LAWRENCE C.

Examiner

Sang Y. Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/14/04, 1/3/05</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 6,718,126. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims include all the elements recited by the pending application claims including the housing, the at least two surfaces, the heating elements in the housing, the outlet, the deposition chamber and the solid precursor such as tantalum containing precursor. The patent claims which includes all the recited application claims in essence "anticipate" the application claims.

3. Claims 16-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 6,718,126 in view of Horsky (US 6,452,338).

The patent claims shows all the recited element of the pending application claims except the heating element contained in the wall of the housing.

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Horsky shows a vaporizer having heating element provided in the wall of the housing which contains the solid precursor. In view of Horsky, it would have been obvious to one of ordinary skill in the art to adapt the patented claims with the heating element in the wall of the housing as an alternative heating element arrangement to also efficiently heat the vaporizing precursor.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 8, 9 and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (US 6,424,800).

Kim shows a housing with an inlet and an outlet, a vaporized solid precursor applied to at least one surface, a first wall to support the inlet, the at least one surface located on a second wall adjoining the first wall, a heating element contained in the housing, a reaction chamber

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connected to the outlet, the at least one surface made of stainless steel in a linear shape, and Kim further shows that a heating element can be contained within the at least one surface.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onoe et al (US 6,270,839) in view of Suntola et al (US 4,413,022).

Onoe shows the apparatus for vaporizing a solid precursor claimed including a housing with a carrier gas inlet, an outlet to a reaction chamber for chemical deposition, at least two surfaces with a linear shape with the solid precursor applied thereon, and the surfaces are also made of a mesh or stainless steel and are spaced from each other to allow passing of the carrier gas. One further shows the surface is supported or located on a wall that adjoins the wall which supports the carrier gas inlet. However, Onoe does not show having a heating member contained in the housing.

Suntola shows a vaporizer having a housing to contain a solid precursor source therein with a heating element (56) provided to the solid precursor source to vaporize the solid precursor. In view of Suntola, it would have been obvious to one of ordinary skill in the art to adapt Onoe with the heating element provided in the housing to more effectively vaporize the solid precursor.

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With respect to claims 7 and 15, it would have been obvious to one of ordinary skill in the art to use any solid precursor, including the tantalum or tungsten containing precursor as desired by the user since such material would have been dependent upon the particular purpose of the chemical deposition. Furthermore it is noted that the material that is worked upon by the apparatus does not limit the apparatus claims.

8. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onoe in view of Horsky (US 6,452,338).

Onoe shows the apparatus claimed except having a heating member in the wall of the housing.

Horsky shows a vaporizer having heating element provided in the wall of the housing which contains the solid precursor. In view of Horsky, it would have been obvious to one of ordinary skill in the art to adapt Onoe with the heating element in the wall of the housing as an alternative heating element arrangement to also efficiently heat the vaporizing precursor.

With respect to claim 20, it would have been obvious to one of ordinary skill in the art to use any solid precursor, including the tantalum or tungsten containing precursor as desired by the user since such material would have been dependent upon the particular purpose of the chemical deposition. Furthermore it is noted that the material that is worked upon by the apparatus does not limit the apparatus claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. P. 2

Sang Y Paik
Primary Examiner
Art Unit 3742

syp